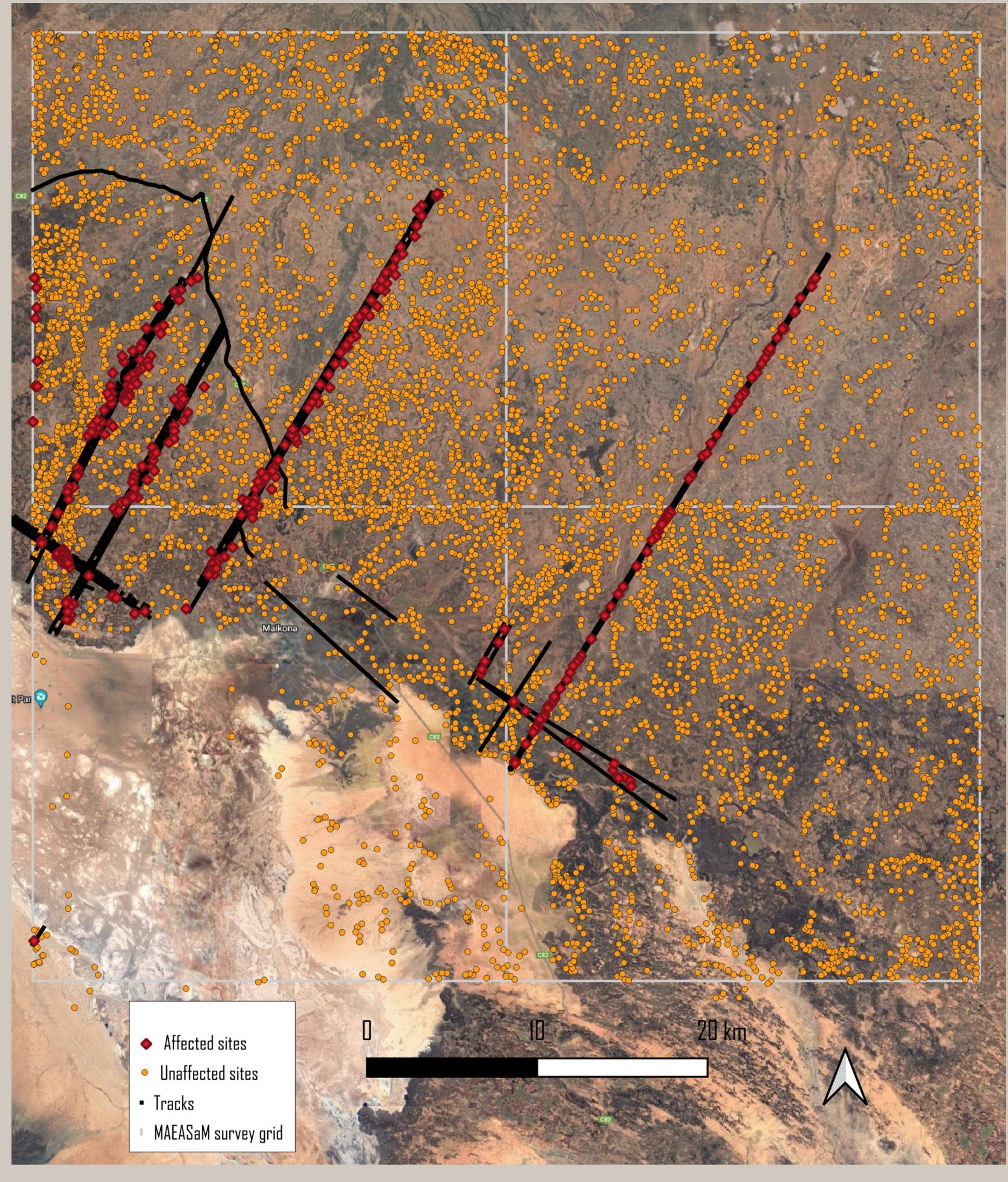
# Mapping the impact of petroleum exploration work on archaeological sites using satellite Imagery and QGIS - a case study from Kenya (Block 10A)

DANA ALSALAMIN



#### METHODOLOGY

Lake Turkana

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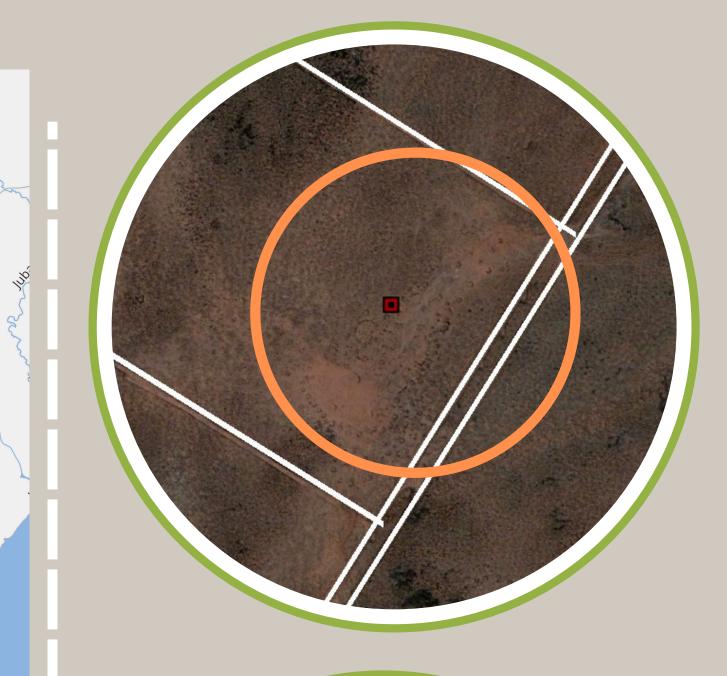
KENYA

- Each black line represents the tracks that were made for vibrators to follow.
- Each yellow point represents a cairn or enclosure unaffected by the work
- Each red point represents an affected cairn or enclosure.

The project uses satellite imagery to cover wide areas efficiently, mapping how development lines intersect with archaeological features.

By documenting the disturbances of the development work on the archaeological sites, we can quantify the impact and refine our methods for better protection,

### RESULTS



Completely Destroyed Sites



Partly Destroyed Sites



Avoided Sites where development lines veer around enclosures.

# INTRODUCTION

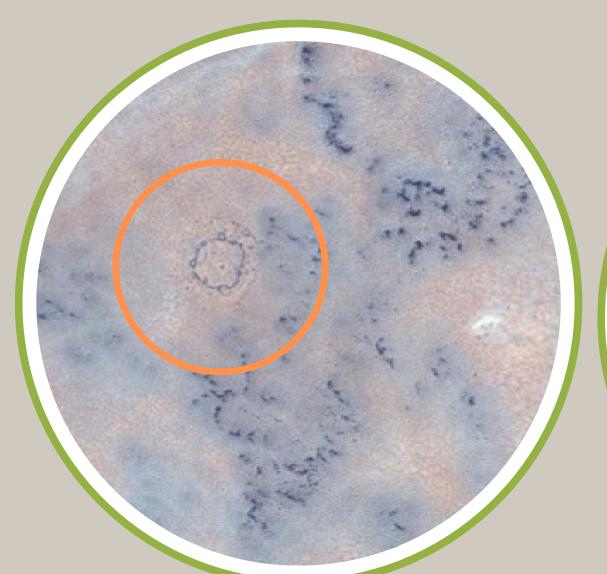
Rapid development projects often pose a threat to archaeological sites. Our work focuses on observing and documenting the effects of such operations in areas rich with undocumented archaeology. In this case study we targeted an area of Northern Kenya to evaluate the impact of petroleum exploration work licensed to Tullow Oil company in block 10. Using Google Earth Pro and QGIS, we analysed multitemporal satellite imagery to assess the area before and after exploration and to determine its impact on archaeological sites.

Despite a requirement from the National Museum of Kenya to safeguard and restore the landscape during and after exploration, remote sensing analysis shows that this was not always followed...

Satellite Imagery Remote Sensing Analysis Impact Documentation

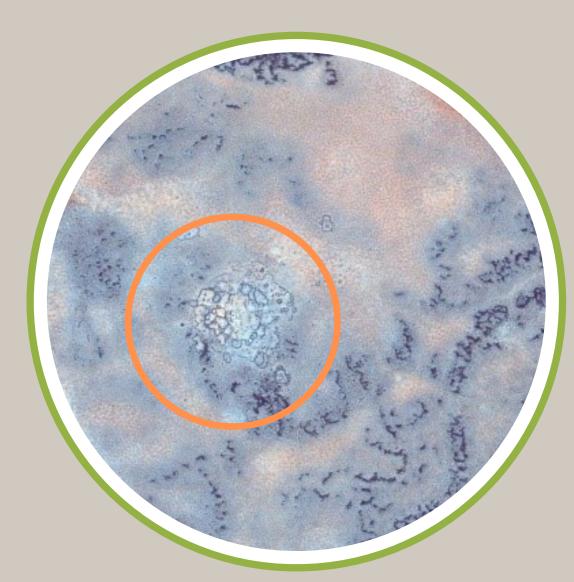


### **EXAMPLES OF ARCHAEOLOGICAL FINDINGS**









## RECOMMENDATIONS:

- Implementing remote sensing and GIS-based integrated analysis in all development projects can help avoid unnecessary destruction. Early-stage documentation allows for route adjustments and conservation measures, preserving our archaeological heritage for future generations.

### CONCLUSION

- Integrating technology such as QGIS, Google Earth Pro, and satellite imagery in archaeology not only enhances our understanding but also actively contributes to heritage conservation.
- Our study demonstrates how the use of remote sensing techniques can enhance planning and help mitigate the adverse effects of development on invaluable archaeological sites

Our approach shows a significant improvement in identifying and protecting archaeological sites compared to traditional methods









